

24. (Allowed) The method of claim 23 additionally comprising a dual acting solenoid, the solenoid being capable of operating in a first mode to set the brake and in a second mode to release the brake.

REMARKS

In the Office Action, claims 7-24 were allowed. Claim 4 was objected to but indicated allowable as rewritten above. Claims 1-2, 5 and 6 were rejected as anticipated by U.S. Patent No. 6,039,158 to Fox (the "Fox patent").

Claim 3 was rejected under 103(a) as unpatentable over Fox. The Office Action indicates that it is well known (and therefore obvious) in the brake industry to use wireless communications to control brakes, such as "end of train devices."

Claim 4 has been rewritten as suggested by the Office Action, and therefore should be allowed as previously indicated in the Office Action. The claim 4 has been rewritten to include limitations of claim 1.

Applicant respectfully traverses each of the rejections, and provides the following comments and observations.

The Fox patent is directed to a parking brake that requires manual intervention to set and release the brake. The claimed invention, on the other hand, provides a structure that affords automated control, requiring no such manual intervention.

In the Fox patent, the ratchet mechanism is designed to need to be re-set each time an attempt is made to set the brake. For example, it is stated in Fox at column 4, lines 25-28 that: "The sheave 34 is prevented from free-spinning by a second ratchet mechanism 70 in a manner known by those of skill in the art."

Furthermore, in the Fox patent disclosure it states that the "second ratchet mechanism 70 holds the brake chain 18 in place until it is desired to release the safety brake 12. In order to release the safety brake 12, a release handle 112 is provided to release the second ratchet mechanism 70 allowing the sheave 34 to free-spin so that the spring 24 pulls the arm 20 to release the parking brake 12". Column 5, lines 7-17.

The operation of the apparatus disclosed in Fox patent, as set forth above, must be released manually. That is, there is no teaching in the Fox patent disclosure of a mechanism that is capable of automatically re-setting the ratchet mechanism prior to attempting to set the brake with motor driven systems.

In contrast, the invention of this application, as stated for example in claim 1, discloses and claims an electrically operable actuating mechanism capable of electronically switching between the first mode and the second mode to set and release the brake without manual re-adjustment of the gearing means.

With regard to claim 2, there is no disclosure of such a control panel in Fox, nor would there be any need for such a panel using the manually operated system of Fox. Thus, there is no motivation in the art for modifying, and then applying Fox, in such a manner.

Furthermore, claim 3 is directed to an embodiment in which the actuating mechanism may be operated remotely by sending signals from a communication device. In the Office Action, the teachings of Fox were acknowledged as not teaching such an apparatus as provided in claim 3. However, Fox was combined under section 103 in the Office Action with so-called "well known" train information, which was not provided in written form.

The apparatus of claim 3 is not shown or disclosed in Fox, nor would it be obvious in light of Fox. Applicant acknowledges that in the industry, some unrelated systems are known for controlling air brakes in a wireless manner. Applicant is not aware, and the Office Action has failed to cite, any prior art indicating the use or wireless control of parking brake systems for locomotives and the like. Furthermore, there is no disclosure in the Office Action of an actuating mechanism capable of electronically switching between the first mode and the second mode to set and release the brake without manual re-adjustment of the gearing means, and operating remotely by sending signals from a communications device, as set forth in claim 3.

Applicant respectfully submits that the present application is in condition for allowance, and a favorable action is requested as to all claims. The Examiner is encouraged to contact the undersigned at his convenience to resolve any remaining issues.

Respectfully submitted,


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Claim Worksheet

4. (Amended) A power driven brake system for a locomotive that is adapted for electronic control, comprising

(a) a wheel braking device capable of applying direct force to prevent rotation of a locomotive wheel and thereby set a brake;

(b) an actuating mechanism comprising a dual acting solenoid for setting and releasing the wheel braking device, the dual acting solenoid being capable of operating in a first mode to set the brake and in a second mode to release the brake, said actuating mechanism further comprising:

i) a motor,

ii) a clutch,

iii) a gearing means; and

iv) an electronic control system;

(c) a linking means, the linking means operably connecting the wheel braking device with the actuating mechanism to facilitate setting and releasing the wheel braking device; and

(d) wherein the dual acting solenoid is under the control of the electronic control system and said electronic control system is therefore capable of electronically switching between the first mode and the second mode to set and release the brake without manual re-adjustment of the gearing means.

9

[The system of claim 1 in which the actuating mechanism employs a dual acting solenoid capable of electronically switching between a first mode to set the brake and a second mode to release the brake.]

9